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Weekly Surveyor

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6 October 1975

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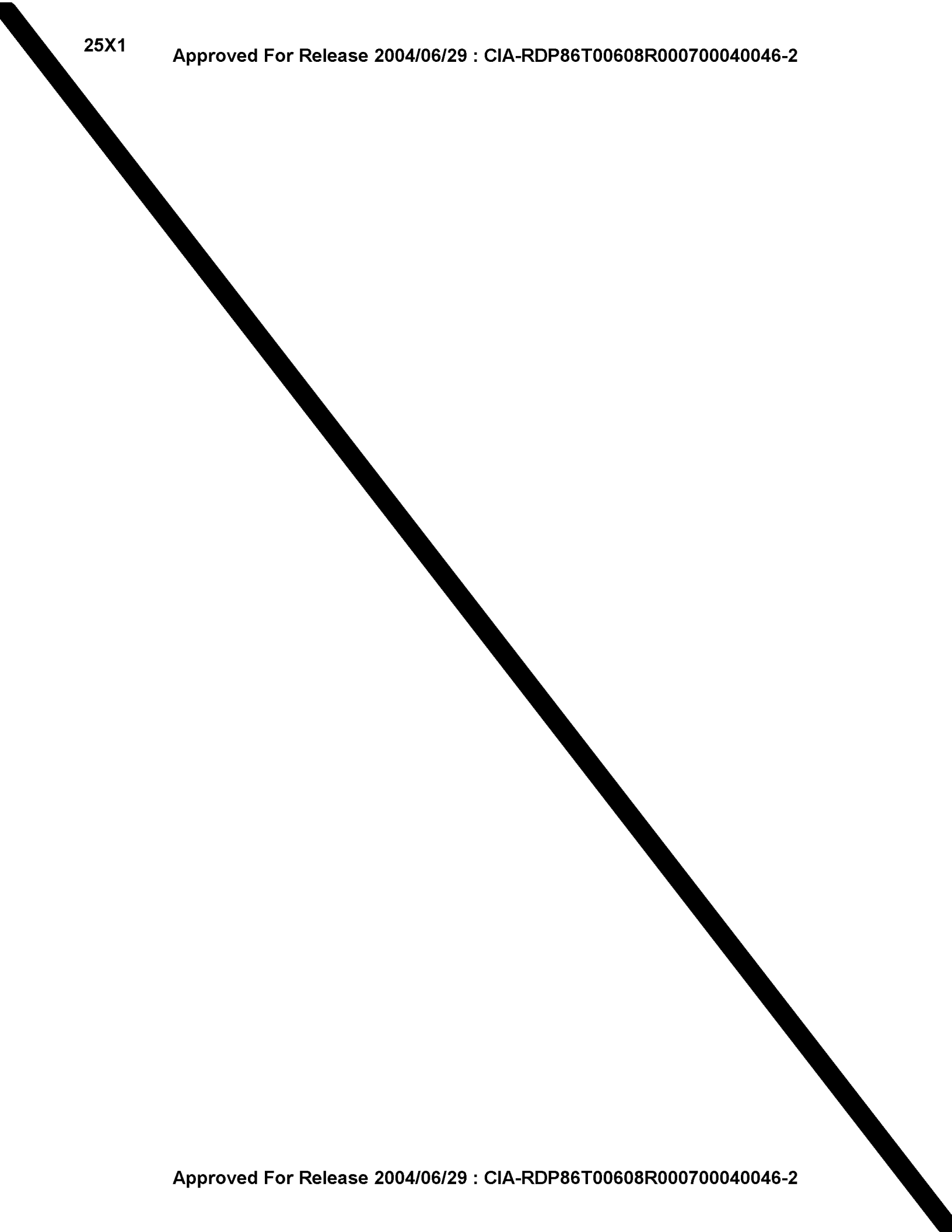

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WEEKLY SURVEYOR

USSR AND EASTERN EUROPE

The USSR may be acquiring Fast Fourier Transform processors in contravention of COCOM export controls.

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A new soybean variety reportedly developed in the USSR could prove extremely significant to Soviet agriculture. If successful on a commercial scale this early maturing, high yielding variety could help solve the Soviets' chronic problem of supplying livestock with protein.

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Bulgaria's decision to manufacture a biological insecticide on a large scale is indicative of a growing concern for the environment. A major advantage of biological insecticides is that they have no residual effects and consequently are non-polluting.

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One third of the spring wheat in some of the dry areas of the USSR reportedly was destroyed by a grain insect similar to the frit fly. The vulnerability of Soviet wheat to insect losses is high because of lack of breeding for insect resistance. Insect outbreaks frequently increase the losses sustained by environmentally stressed wheat and also reduce wheat quality.

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A second Soviet/Indian satellite scheduled to be launched in 1977/78 probably will carry an earth resources-type payload. This will give the Indians time to develop a modest experimental payload of this type. Scientific measurements from the first Soviet/Indian satellite were terminated after only a few days in orbit due to a problem with the on-board power system.

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WESTERN EUROPE

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Upon the dissolution of the European Unidata computer consortium, Siemens of West Germany will assume responsibility for production of the four models in the Unidata line. The technical difficulties and financial problems historically faced by the European computer industry, including Siemens, portend little likelihood for Siemens' success in its efforts.

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The Pakistani Government is planning to introduce swine fever virus into the wild swine population as a control measure. This approach has the potential of reducing the wild swine, but it also could pose a threat to the domestic swine in contiguous states of India.

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SPACE

Second Soviet/Indian Satellite to Perform Earth Resources Experiments During 1977-78: India and the USSR have signed an agreement for launching the second Indian satellite. The satellite will be launched by the Soviets in 1977-78 from a launch site in the USSR.

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Comment: The Indians have been interested in launching a second satellite with the Soviets for some time. The Indians previously have stated that they would like to equip this satellite with earth resources-type experiments. With a scheduled launch date of 1977 or 1978, the Indians probably will have the time to develop a modest experimental payload of this type. Specific details of the proposed payload are unknown, but officials of the Indian Space Research Organization have indicated that a passive microwave experiment may be included. Microwave measurements have proved to be useful in determining sea states and water content of the atmosphere.

The cooperative effort between the Soviets and Indians for the first satellite launching on 19 April proceeded relatively smoothly. The satellite has not performed up to expectations, however. Problems with the power system forced them to cease taking scientific measurements after a few days in orbit. In the future, probably after 1978, India intends to launch satellites with its own launch system.

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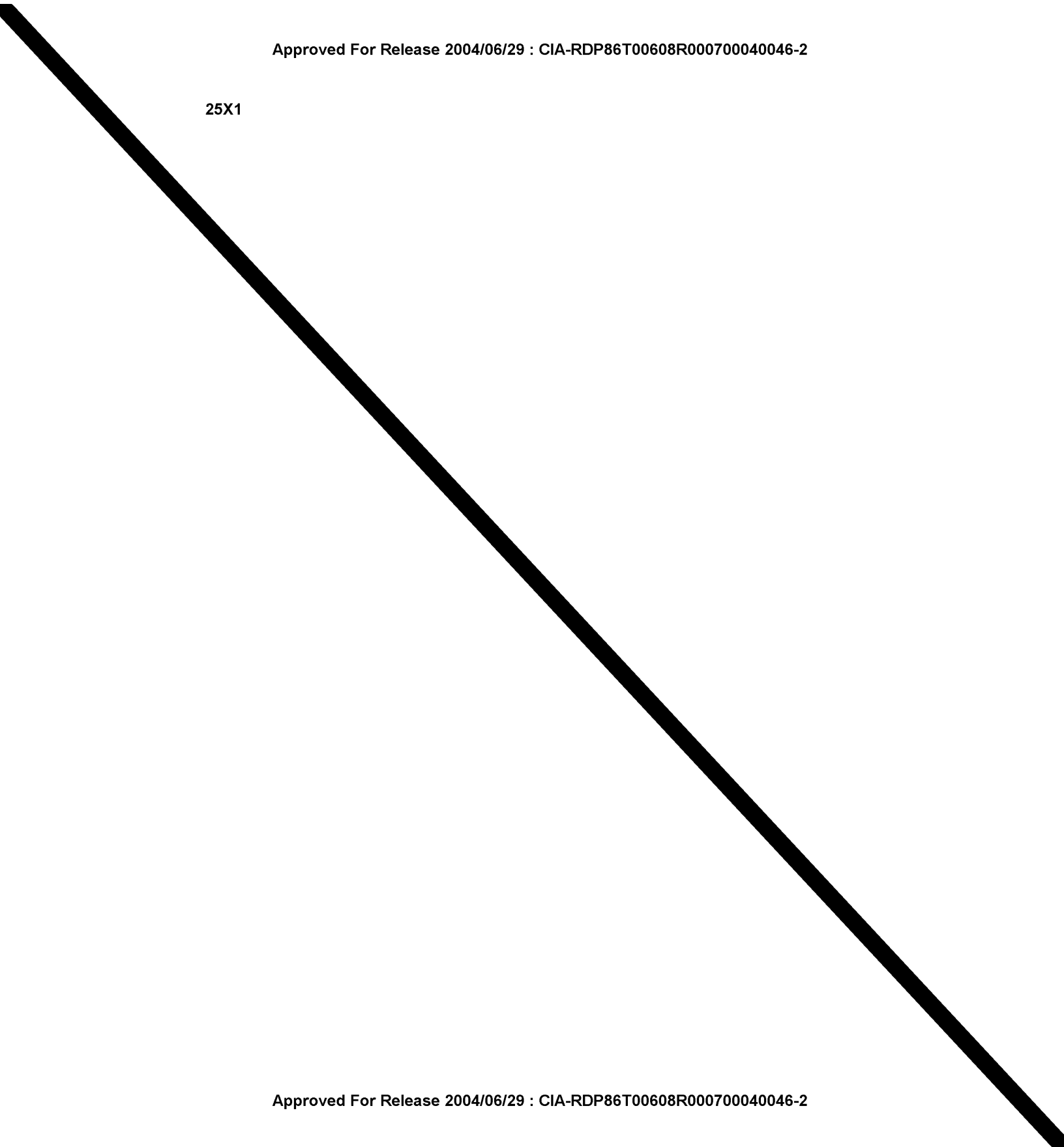

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AGROTECHNOLOGY AND FOOD RESOURCES

New Soybean Variety Could Help Solve Soviet Livestock Protein Problem: At the World Soybean Congress which recently met in the US, Dr. N. I. Korsakov, Director, Department of Leguminous Crops, All Union Institute of Plant Industry, revealed that an early maturing variety of soybeans had been developed. On an experimental basis, it yields 40 to 45 bushels per acre. Korsakov stated that he has 2,000 lines of germ plasm, and that his major work involves the development of new soybean varieties. These are then sent to plant breeders for more selective development and adaptation to local conditions.

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Comment: An early maturing soybean variety for the Khabarovsk/Vladivostok area that yielded even half of the 40 to 45 bushels reported would be extremely significant. Soviet soybeans are now yielding an average of about 7 bushels per acre. About 99 percent of Soviet soybeans are grown in this area. Such a development would help solve the chronic problem of supplying livestock with protein.

The climatic possibilities for growing soybeans on a large scale in the USSR are poor. Nevertheless, the Soviet Ministry of Agriculture is under orders to expand soybean production, and in the USSR, this can best be done through improved varieties and cultivation. To this end the Soviets have sought US help in the form of germ plasm and laboratory equipment for soybean analysis. They are also building a chemical plant in the Far East to produce a herbicide similar to the US product "Treflan" to improve soybean cultivation.

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Bulgarians Intend to Use US Biological Insecticide: Bulgarian officials are negotiating with a major US pharmaceutical company for the technology and equipment to establish six plants for the fermentation of Bacillus thuringiensis (Bt), a microbial insecticide. Once negotiations are completed, the plants could be on stream within 1 year and could have an initial annual production of 200,000 metric tons. Tentative arrangements provide for the sale of Bt within Bulgaria, East Germany, and the USSR.

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Comment: The decision to manufacture a biological insecticide on a relatively large scale is indicative of Bulgaria's growing concern for the environment. Chemical pesticides in the run-off from crop lands contribute significantly to the pollution of rivers and streams. Bt, however, is a short-life, biodegradable, nonpollutant with none of the adverse effects of some of the chemical insecticides now being used. It has proven to be an effective control measure for insects that attack leafy crops, vegetables, and forests. The use of Bt in Bulgaria and other East European countries instead of an equivalent amount of toxic chemicals should benefit the environment of these countries measurably.

The market for chemical pesticides in East European countries is very good and probably will remain so indefinitely. At the same time, however, these countries have a strong interest in Bt and other biological control measures which some scientists believe to be the threshold of a new era in pest control.

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Soviet Wheat Losses in the New Lands Exacerbated by Insect Damage: According to Soviet spring wheat experts, portions of the spring grain area suffered the worst drought since 1921. The Swedish frit fly (sic) destroyed one-third of the spring wheat in some of the dry areas. The insect thrives on hot, dry conditions and destroys the central and secondary wheat stalks (tillers). It is hard to estimate how much the total yield was reduced by this infestation. The Soviets have formed a special research committee to study this problem and to develop resistant varieties. A high priority has been accorded this project.

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Comment: Frit fly infestations, are not generally favored by hot, dry weather and the above reported losses may have resulted from attacks by the late wheat "shoot fly." The damage is externally similar to that caused by the frit fly. Spring wheat in the New Lands area is known to be particularly susceptible to this shoot fly, which may reduce yields by as much as 30% in hot, dry years.

In 1974, frit fly damage was reported on late-seeded spring wheat in the Tselinograd area. The frit fly is known to cause 20 to 50% damage to stems and to reduce

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wheat yields by 10% or more in the moist non-black soil zone of the USSR.

The vulnerability of Soviet wheat to losses from insect pests is high because breeding for insect resistance has been neglected in the USSR. Outbreaks of insect pests frequently add to the reduced yields sustained by environmentally stressed wheat and also reduce wheat quality. Although no estimate of actual losses to spring grain are given, the establishment of a "high priority" research project implies that they were significant.

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Pakistan Plans Intentional Wild Swine Infection as Control Measure: The Pakistan Government is planning to introduce intentionally swine fever (hog cholera) virus into the wild swine population in the province of Punjab as a control measure. The destruction of agricultural crops by the wild swine has prompted this approach. Wild swine would be captured, injected, and then released to spread the fatal disease among the wild swine. US officials have expressed concern about the plan to Pakistan officials.

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Comment: The introduction of swine fever virus into the wild swine populations has the definite potential of establishing an epizootic of the disease and probably would result in substantial deaths. It also would have the potential of spreading to domestic swine in Pakistan as well as in contiguous states of India where unprotected swine could be infected. The human health hazard from consumption of meat from infected swine is considered minimal. This method of control was considered in April, but apparently it was not initiated then.

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PHYSICAL SCIENCES AND TECHNOLOGIES

Soviets May Be Acquiring Fast Fourier Transform Processors: At a recent exhibition in Moscow, a representative of a French company reportedly said that his company has sold Fast Fourier Transform (FFT) processors to the USSR. According to the report, the company representative "appeared unconcerned about COCOM controls."

The French instrument is a hard-wired FFT processor which can perform a variety of digital signal analysis operations such as correlation, signal averaging, digital filtering, and probability density analysis. It is capable of FFT spectrum analysis on up to 4096 time data points, with millihertz resolution of narrow bandwidth signals. It can accept up to 32 inputs. 25X1

Comment: Such FFT processors are powerful tools for analyzing signals with bandwidths of about a MHz or less. Most of their applications are in acoustics and vibration analysis. 25X1 25X1 The multiple input capabilities would permit processing of data from multiple acoustic sensors. FFT processors are embargoed by Item 1529(b) (4) of the COCOM List. 25X1

West German Firm, Siemens, Will Assume Unidata Computer Line: Although the Unidata combination of European computer manufacturers has yet to be formally dismantled, Philips of the Netherlands has announced its withdrawal. Siemens of West Germany and Compagnie Internationale pour l'Informatique (CII) of France also have agreed to end the basic Unidata agreement in its present form. Siemens is now planning to build all four of the present Unidata models, thus taking over responsibility for the small 7720 model developed by Philips and the 7740 developed by CII. Philips will return to its profitable small business machine and minicomputer operations. 25X1 25X1

Comment: In assuming the Unidata model line, Siemens will be facing competition from the new French CII-Honeywell Bull combine. The combination of technological difficulties and the financial problems histori-

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cally faced by the European computer industry including Siemens, portends little likelihood of Siemens success in its efforts. Siemens is unlikely to obtain sufficient sales to provide the financial resources needed to support the level of R&D required to introduce new lines of general purpose computers every 5 years. Facing these realities, Siemens may well follow CII and seek a tie-in with a US computer manufacturer.

In order to offer a full line of up-to-date computer systems to its customers, Siemens must add a computer model larger than the IBM 370/158 and high-speed, high-capacity disk drives comparable to the IBM 3330. Siemens does not have this capability and must either attempt to develop this disk technology itself, a major technical and time consuming task, or acquire it from CII, Japan or the US. Siemens only access to large-scale computer technology resulted from its acquisition of the Telefunken computer operations about a year ago. Development of the largest model in the Telefunken line, the 550, was terminated at that time.

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